1. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-30}{35x-10}+1=\frac{-30}{35x-10}$$

A. $x \in [0.29, 2.29]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [-0.4, 0.2]$

D. $x_1 \in [-0.4, 0.2]$ and $x_2 \in [-0.71, 2.29]$

E. $x_1 \in [0.2, 0.8]$ and $x_2 \in [-0.71, 2.29]$

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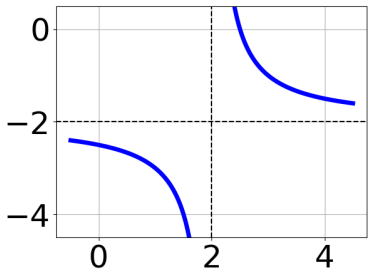
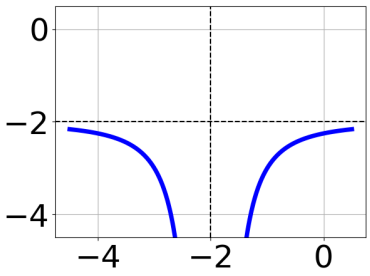
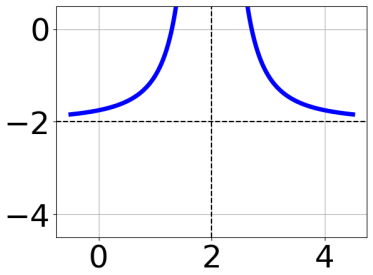
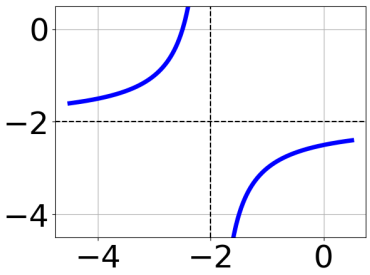
2. Choose the graph of the equation below.

$$f(x)=\frac{1}{(x-2)^2}-2$$

A.


C.


B.


D.


E. None of the above.

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3. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{2x}{7x+2}+\frac{-5x^2}{-35x^2-31x-6}=\frac{4}{-5x-3}$$

A. $x \in [-0.53, 0.55]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [-2.69, -1.04]$ and $x_2 \in [-0.27, -0.24]$

D. $x \in [-0.88, -0.31]$

E. $x_1 \in [-2.69, -1.04]$ and $x_2 \in [-0.3, -0.28]$

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4. Determine the domain of the function below.

$$f(x) = \frac{6}{36x^2 + 54x + 20}$$

A. All Real numbers except $x = a$, where $a \in [-30.08, -29.84]$

B. All Real numbers.

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.86, -0.73]$ and $b \in [-0.73, -0.5]$

D. All Real numbers except $x = a$, where $a \in [-0.86, -0.73]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-30.08, -29.84]$ and b $[-24.13, -23.8]$

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5. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-9}{4x - 4} + -6 = \frac{-6}{-20x + 20}$$

A. $x_1 \in [-3.42, 0.57]$ and $x_2 \in [0.49, 0.7]$

B. $x \in [-3.42, 0.57]$

C. $x_1 \in [0.57, 3.58]$ and $x_2 \in [0.74, 1.39]$

D. All solutions lead to invalid or complex values in the equation.

E. $x \in [0.57, 1.57]$

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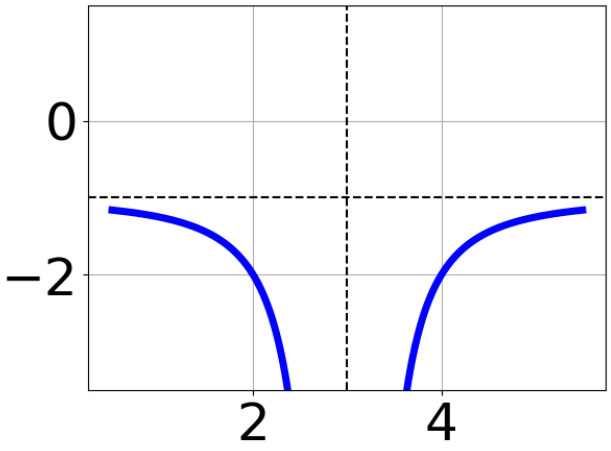
6. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{(x-3)^2} - 1$

B. $f(x) = \dfrac{1}{(x+3)^2} - 1$

C. $f(x) = \dfrac{1}{x+3} - 1$

D. $f(x) = \dfrac{-1}{x-3} - 1$

E. None of the above

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7. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-3x}{-6x-7} + \frac{-6x^2}{-30x^2-47x-14} = \frac{-3}{5x+2}$$

A. $x_1 \in [-1.64, -0.93]$ and $x_2 \in [-0.7, 1.1]$

B. $x \in [-1.64, -0.93]$

C. $x \in [-0.54, -0.38]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [-0.6, -0.44]$ and $x_2 \in [-3.7, -1.3]$

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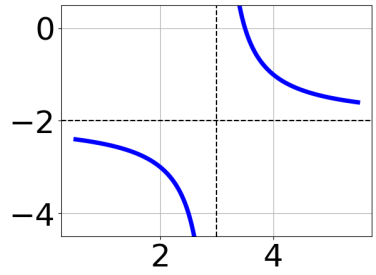
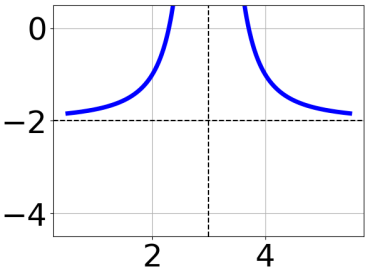
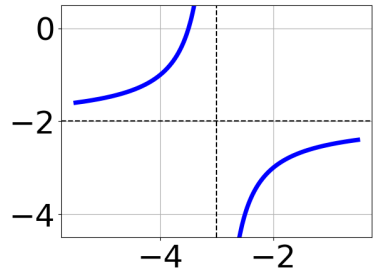
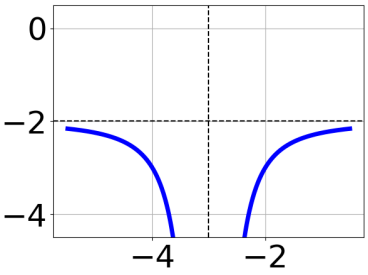
8. Choose the graph of the equation below.

$$f(x) = \frac{-1}{(x-3)^2} - 2$$

A. 

C. 

B. 

D. 

E. None of the above.

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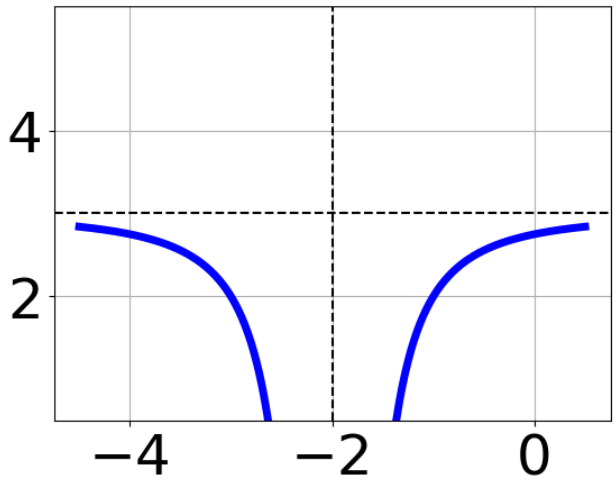
9. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{(x+2)^2} + 3$

B. $f(x) = \dfrac{1}{x-2} + 3$

C. $f(x) = \dfrac{1}{(x-2)^2} + 3$

D. $f(x) = \dfrac{-1}{x+2} + 3$

E. None of the above

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10. Determine the domain of the function below.

$$f(x) = \frac{5}{15x^2 + 42x + 24}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-20.36, -19.15]$ and b $[-18.44, -17.43]$

B. All Real numbers except $x = a$, where $a \in [-2.3, -1.32]$

C. All Real numbers.

D. All Real numbers except $x = a$, where $a \in [-20.36, -19.15]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-2.3, -1.32]$ and $b \in [-1, -0.34]$
